

FORM PTO-1449
(Modified)U.S. DEPARTMENT OF COMMERCE
PATENT AND TRADEMARK OFFICEATTY. DOCKET NO.
KG-1486

SERIAL NO.

09/632,400

INFORMATION DISCLOSURE
STATEMENT BY APPLICANTAPPLICANT
Shivanand Majagi et al.

FILING DATE

August 4, 2000

GROUP TECH CENTER 1600/2900
2900(Use several sheets if necessary)
(37 CFR 1.98(b))

U.S. PATENT DOCUMENTS

EXAMINER INITIAL		PATENT NUMBER							ISSUE DATE	PATENTEE	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
12x	A	2	8	8	2	4	7		05/1959	Haglund	255	63	
	B	3	4	5	1	7	9	1	06/1969	Meadows	29	182.8	
	C	3	8	5	0	3	6	8	11/1974	Boeckeler	233	25	
	D	3	8	8	8	6	6	2	06/1975	Boeckeler	75	203	
	E	3	9	0	9	8	9	5	10/1975	Abrahamson et al.	29	95	
	F	4	1	9	4	7	9	0	03/1980	Kenny et al.	299	79	
	G	4	2	4	9	9	5	5	02/1981	Grab et al.	106	308	
	H	4	3	0	3	4	1	6	12/1981	Springborn	51	293	
	I	4	3	5	9	3	3	5	11/1982	Garner	75	208	
	J	4	4	2	8	9	0	6	01/1984	Rozmus	419	48	
12x	K	4	4	8	4	6	4	4	11/1984	Cook et al.	175	410	

FOREIGN PATENT OR PUBLISHED FOREIGN PATENT APPLICATION

		DOCUMENT NUMBER							PUBLICATION DATE	COUNTRY OR PATENT OFFICE	CLASS	SUBCLASS	TRANSLATION	
													YES	NO
12x	L	0	0	7	2	1	7	5	02/1983	EP				
	M	0	1	1	1	6	0	0	06/1984	EP				
	N	0	1	9	4	0	1	8	9/1986	EP				
	O	0	2	3	3	1	6	2	08/1987	EP				
	P	0	4	9	8	7	8	1	08/1992	EP				
20	Q	0	5	4	2	7	0	4	05/1993	EP				

OTHER DOCUMENTS (Including Author, Title, Date, Relevant Pages, Place of Publication)

12x	R	"Cemented Carbide in High Pressure Equipment," B. Zetterlund, <u>High Pressure Engineering</u> , Vol. 2 (1977), pp. 35-40.
	S	"Utilization of Magnetic Saturation Measurements for Carbon Control in Cemented Carbides," D.R. Moyle & E.R. Kimmel, <u>1984 ASM/SCTE Conference on Technology Advancements in Cemented Carbide Production</u> , Pittsburgh, PA 2-4 December 1984, also available as <u>Metals/Materials Technology Series No. 8415-009</u> (1984), pp. 1-5, American Society for Metals, Metals Park, Ohio
4x	T	"Binder Mean-Free-Path Determination in Cemented Carbide by Coercive Force and Material Composition," R. Porat & J. Malek, <u>Materials Science and Engineering</u> , Vol. A105/106 (1988), pp. 289-292

EXAMINER

DATE CONSIDERED

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FORM PTO-1449 (Modified)		U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE		ATTY. DOCKET NO. KG-1486		SERIAL NO. 09/632,400 NOV 06 2000									
INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Use several sheets if necessary) (37 CFR 1.98(b))				APPLICANT Shivanand Majagi et al.		FILING DATE August 4, 2000									
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U.S. PATENT DOCUMENTS															
EXAMINER INITIAL		PATENT NUMBER							ISSUE DATE	PATENTEE	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE		
U	U	4	4	9	1	5	5	9	01/1985	Grab et al.	419	36			
	V	4	5	4	7	3	3	7	10/1985	Rozmus	419	49			
	W	4	6	1	0	9	3	1	09/1986	Nemeth et al.	428	547			
	X	4	7	0	5	1	2	4	11/1987	Abrahamson et al.	175	410			
	Y	4	7	2	2	4	0	5	02/1988	Langford, Jr.	175	374			
	Z	4	7	4	3	5	1	5	05/1988	Fischer et al.	428	698			
	AA	4	7	4	4	9	4	3	05/1988	Timm	419	10			
	BB	4	8	2	0	4	8	2	04/1989	Fischer et al.	419	15			
	CC	4	8	5	4	4	0	5	08/1989	Stroud	175	374			
	DD	4	9	2	3	5	1	2	05/1990	Timm et al.	75	239			
	EE	4	9	4	5	0	7	3	07/1990	Dubensky et al.	501	93			
FOREIGN PATENT OR PUBLISHED FOREIGN PATENT APPLICATION															
		DOCUMENT NUMBER							PUBLICATION DATE	COUNTRY OR PATENT OFFICE	CLASS	SUBCLASS	TRANSLATION YES NO		
	GG	0	6	5	9	7	6	5	10/1951	UK					
	HH	0	8	0	6	4	0	6	12/1958	UK					
	II	0	9	1	1	4	6	1	11/1962	UK					
	JJ	1	1	1	5	9	0	8	06/1968	UK					
	KK	1	1	1	9	8	5	0	03/1982	CA					
OTHER DOCUMENTS (Including Author, Title, Date, Relevant Pages, Place of Publication)															
	LL	"Standard Practice for Evaluating Apparent Grain Size and Distribution of Cemented Tungsten Carbides," ASTM Designation B 390-92, 1992 Annual Book of ASTM Standards, Vol. 02.05, pp. 1-4													
	MM	"Isotropic and Gradient Hard Metals Fabricated by Infiltration," M. Gasik, V. JäerVELÄ, K. Lilius & S. Strömberg, Proceedings of the 13 th International Plansee Seminar, Eds. H. Bildstein & R. Eck, Metallwerk Plansee, Vol. 2 (1993), pp. 553-561													
	NN	"Processing of Functional-Gradient WC-Co Cermets by Powder Metallurgy," C. Colin, L. Durant, N. Favrot, J. Besson, G. Barbier, & F. Delannay, International Journal of Refractory Metals & Hard Materials, Vol. 12, No. 3 (1993-1994), pp. 145-152													
EXAMINER										DATE CONSIDERED					
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U.S. PATENT DOCUMENTS														
EXAMINER INITIAL		PATENT NUMBER							ISSUE DATE	PATENTEE	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE	
12	OO	4	9	5	6	0	1	2	09/1990	Jacobs et al.	75	236		
	PP	5	0	7	4	6	2	3	12/1991	Hedlund et al.	299	79		
	QQ	5	0	8	9	1	8	2	02/1992	Findeisen et al.	264	8		
	RR	5	1	5	6	7	2	5	10/1992	Doktycz et al.	204	192.16		
	SS	5	2	1	5	9	4	5	06/1993	Dubensky et al.	501	94		
	TT	5	2	3	2	5	2	2	08/1993	Doktycz et al.	148	218		
	UU	5	2	5	0	3	6	7	10/1993	Santhanam et al.	428	698		
	VV	5	2	5	6	6	0	8	10/1993	Dubensky et al.	501	94		
	WW	5	3	3	3	5	2	0	08/1994	Fischer et al.	76	108.2		
	XX	5	3	3	5	7	3	8	08/1994	Waldenstrom et al.	175	420.2		
7	YY	5	3	7	4	3	9	2	12/1994	Skelcey et al.	419	49		
FOREIGN PATENT OR PUBLISHED FOREIGN PATENT APPLICATION														
		DOCUMENT NUMBER							PUBLICATION DATE	COUNTRY OR PATENT OFFICE	CLASS	SUBCLASS	TRANSLATION YES NO	
12	ZZ	1	3	8	3	4	2	9	02/1974	UK				
	AAA	2	0	0	4	3	1	5	03/1979	UK				
	BBB	2	0	1	7	1	5	3	10/1979	UK				
	CCC	2	0	3	7	2	2	3	07/1980	UK				
	DDD	2	2	1	1	8	7	5	07/1989	UK				
12	EEE	2	3	4	3	8	8	5	1977	FR				X
OTHER DOCUMENTS (Including Author, Title, Date, Relevant Pages, Place of Publication)														
12	FFF	Viswanadham, R.K., "Stability of Microstructural Discontinuities in Cemented Carbides," <u>International Journal of Powder Metallurgy</u> , October 1987, USA, Vol. 23, No. 4, ISSN 0361-3488, pp. 229-235												
	GGG	Richter, V., "Fabrication and Properties of Gradient Hard Metals," "3 rd International Symposium on Structural and Functional Gradient Materials, Proceedings of FGM '94, Lausanne, Switzerland, 10-12, October 1994, 1995, Lausanne, Switzerland, Presses Polytech. Univ., Romandes, Switzerland, whole document												
	HHH	Almond et al., "Identification of Optimum Binder Phase Compositions for Improved WC Hard Metals," <u>Materials Science & Engineering</u> , Vol. A105/106, Nov. 1988, pp. 237-248, XP 000569230												
EXAMINER <i>[Signature]</i>										DATE CONSIDERED 04/08/02				
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U.S. PATENT DOCUMENTS

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4	III	5	4	5	3	2	4	1	09/1995	Akerman et al.	419	14	
	JJJ	5	4	6	7	6	6	9	11/1995	Stroud	76	108.2	
	KKK	5	4	8	4	1	9	1	01/1996	Sollami	299	105	
	LLL	5	5	4	3	2	3	5	08/1996	Mirchandani et al.	428	547	
	MMM	5	5	4	1	0	0	6	07/1996	Conley	428	552	
	NNN	5	5	9	3	4	7	4	01/1997	Keshavan et al.	75	240	
	OOO	5	6	7	7	0	4	2	10/1997	Massa et al.	428	212	
	PPP	5	6	7	9	4	4	5	10/1997	Massa et al.	428	212	
	QQQ	5	6	8	6	1	1	9	11/1997	McNaughton, Jr.	425	130	
	RRR	5	6	9	7	0	4	2	12/1997	Massa et al.	419	010	
	SSS	5	6	9	7	0	4	6	12/1997	Conley	428	547	
	TTT	5	7	6	2	8	4	3	06/1998	Massa et al.	264	60	
	UUU	5	7	7	6	5	9	3	07/1998	Massa et al.	428	212	
	VVV	5	7	8	9	6	8	6	08/1998	Massa et al.	75	240	
	WWW	5	7	9	2	4	0	3	08/1998	Massa et al.	264	122	
4	XXX	5	8	0	6	9	3	4	09/1998	Massa et al.	299	111	

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													YES	NO
4	ZZZ	3	0	0	5	6	8	4	08/1981	DE			x	
	A1	3	5	1	9	1	0	1	05/1985	DE			x	
4	B1	8	8	1	3	7	3	1	05/1989	DE-U				x

OTHER DOCUMENTS (Including Author, Title, Date, Relevant Pages, Place of Publication)

C1	Roebuck, B., "Magnetic Moment (Saturation) Measurements on Hardmetals," NPL National Physical Laboratory, Teddington, Middlesex TW11 0LW, United Kingdom, December 1994
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